

Section C - Description/Specifications/Statement of Work
GENERAL SPECIFICATIONS
STOCKMORE BARRACKS AND WAREHOUSE ROOFING

03/27/2014

1.1 SCOPE OF CONTRACT

- A. This project includes all requirements to install new architectural grade asphalt shingles over existing shingled roofs at 2 locations, the Stockmore Barracks and Warehouse:

1. Stockmore Barracks Roofing

- a. Roofing square footage is approximately 1490 sf, with a 4/12 roof pitch. Contractor is responsible for verifying square footage and quantities on site.
- b. This portion of the project requires the following.
 - 1) Install new shingles over existing 3-Tab shingle roof as shown in specifications.

2. Stockmore Warehouse Roofing

- a. One half of Roof shingles were replaced a few years ago. Portion of Roof to be shingled is approximately 1152 square feet with a 4/12 roof pitch. Contractor is responsible for verifying square footage and quantities on site.
- b. This portion of the project requires the following.
 - 1) Remove existing shingles of north half of Warehouse Roof. Strip down to sheathing.
 - 2) Install Ice and Water shield underlayment, and Roofing felt as per specification.
 - 3) Install new metal drip edge
 - 4) Install shingles as directed by specifications
 - a) 33 bundles of shingles, (approx. 11 square) shall be provided by FS. Contractor shall be responsible to provide all additional shingles to exactly match, and other materials to finish the roof construction as per specifications.

1.2 PROJECT LOCATION

- A. The existing Stockmore Barracks and Warehouse Buildings are located at 44227 West Highway 35, Hanna, UT 84031.

1.3 SITE INFORMATION AND LIMITATIONS

- A. The following site conditions are considered incidental to the contract and the contractor will not be paid directly for any of the following items:

1. Construction sites will be open to the Forest Service Employees during construction.
2. Use of Site: Limit use of premises to work in areas indicated by COR. Do not disturb portions of site beyond areas in which the Work is indicated
3. There is existing electrical service for the site. Contractor shall have permission to use existing electrical services during construction. Contractor shall be aware of the use of electrical services, and shall limit the use of electrical services to the construction alone. Contractor is responsible for turning off all lights and power so as not to waste electricity. Contractor shall provide connections and extensions of services as required for construction operations.
4. The residence will be occupied during the construction. The contractor shall take necessary precautions to keep the facility weathertight and to avoid damage to the facility.
5. Water and power are available at the site for construction purposes.
6. The Contractor shall provide temporary toilet facilities (porta-potty) at the site during all construction work.
7. Construction Hours – Hours of operation for the construction, demolition, excavation and subsequent cleanup shall be only between the hours between 7:00 a.m. and 7:00 p.m. Monday through Saturday.

1.4 TEMPORARY ACCESS

- A. Parking: Use designated areas for construction personnel or as approved by the Contracting Officer. Coordinate all parking with the Contracting Officer.

1.5 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. The Contracting Officer (CO) reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on CO's receipt of submittal.
 1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. CO will advise Contractor when a submittal being processed must be delayed for coordination.
 2. If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Allow 14 days for processing each re-submittal.

4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- C. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space on label or beside title block to record Contractor's review and approval markings and action taken by CO.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Contractor.
 - d. Name of manufacturer.
 - e. Unique identifier, including revision number.
 - f. Number and title of appropriate Specification Section.
 - g. Drawing number and detail references, as appropriate.
 - h. If more than one item is shown on submittal sheet, identify item.
- D. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- E. Additional Copies: Unless additional copies are required for final submittal, and unless CO observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
- F. Use for Construction: Use only final submittals with mark indicating action taken by CO in connection with construction.

1.6 MEASUREMENT AND PAYMENT

- A. Stockmore Barracks Re-Roof – Measurement and Payment shall be Lump Sum Quantity (LSQ) as shown in the Schedule of Items for the re-roof of the Barracks Building to be completed and ready for use. Measurement shall include all work items included in the drawings and specifications.
1. LUMP SUM QUANTITIES (LSQ) - These quantities denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job. They shall not be measured.
- B. Stockmore Warehouse Roof Demolition and Re-Roof – Measurement and Payment shall be Lump Sum Quantity (LSQ) as shown in the Schedule of Items for the demolition and re-roof of the Warehouse Building to be completed and ready for use. Measurement shall include all work items included in the drawings and specifications.
1. LUMP SUM QUANTITIES (LSQ) - These quantities denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job. They shall not be measured.

1.7 WASTE MANAGEMENT AND DISPOSAL

- A. Processing waste material for salvage and recycling is encouraged.
- B. The Contractor shall provide and maintain appropriate waste disposal containers or bins at the project site for the duration of the project construction. Verify with Contracting Office for placement of disposal containers and bins on the project site.
- C. Waste material and debris shall be picked up and deposited in the waste disposal bins on a daily basis. Containers must be emptied on a weekly basis unless more frequent emptying is needed. Construction materials and debris shall not be allowed to become airborne or migrate into adjacent properties.
- D. Burning or burying of construction waste material on site will not be permitted. Material shall be disposed of in accordance with the Waste Material Disposal specification.

1.8 TRAFFIC CONTROL AND CONSTRUCTION SIGNING

- A. No work that endangers, interferes, or conflicts with traffic or access to work sites shall be performed until a plan for satisfactory warning and handling of traffic has been submitted by the contractor and approved by the COR and Utah Department of Transportation. Construction signing for traffic control shall conform to the Manual of Uniform Traffic Control Devices (MUTCD). All traffic control signs will be placed in areas adequate for a truck pulling a fifth wheel trailer to be turned around. Contractor shall not be paid directly for this item, rather it will be considered incidental to other items of work listed in the Schedule of Items.

1.9 WORK CAMPS, STAGING AND STORAGE AREAS

- A. Areas for staging operations and storage of materials shall be approved by the CO. The Contractor must request in writing for approval from the CO to stage trailers (work) on site.
- B. No overnight camping will be allowed on site.

1.10 INSPECTION OF WORKSITE

- A. The contractor acknowledges they have taken the necessary steps to ascertain the nature and location of work, and have investigated and satisfied themselves as to the general and local conditions that can affect the work or its cost. Any failure of the contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from the responsibility of estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expenses to the government.

1.11 START DATE

A. July 2014

1.12 CONTRACT TIME

A. Base Bid: 30 Calendar Days

END OF SECTION C

May 2014

USDA FOREST SERVICE, R-4
STOCKMORE BARRACKS AND WAREHOUSE ROOFING
SECTION 073110 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Shingle Application: Current shingle system is to be torn off to decking and inspected for damage. All damaged decking is to be replaced with like material. New roof shall be composed as shown in drawings for a complete watertight roofing system.
- B. This Section includes the following:
 - 1. Asphalt shingles.
 - 2. Self-adhering sheet underlayment.
- C. Related Sections include the following:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for metal roof penetration flashings and counter flashings not part of this Section.

1.2 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.3 SUBMITTALS

- A. Product Data: Product literature for each type of product indicated.
- B. Manufacturers Application Instructions.
- C. Maintenance Data: For asphalt shingles to include in maintenance manuals.
- D. Warranties: Manufacturers 30 year Limited Warranty. See below.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual that is approved, authorized, or licensed by asphalt shingle roofing system manufacturer to install roofing system indicated.
- B. Source Limitations: Obtain all shingles, including ridge and hip cap shingles through one source from a single asphalt shingle manufacturer.
- C. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting

agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Shingles shall carry the following labels:

- a. UL 790, Class A Fire Resistance
- b. UL 316, Wind Resistance
- c. ASTM D3462

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's unopened bundles with labels intact and legible.
- B. Handle and store materials on site to prevent damage. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store in a covered, ventilated area of a maximum temperature of 100 degrees F. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
 - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- C. Do not stack product.
- D. Roof Top Loading: Lay shingle bundles flat. Do not bend over the ridge.
- E. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements.
 - 1. Installation:
 - a. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.
 - b. Do not install underlayment or shingles on wet or damaged materials.

1.7 COORDINATION

- A. Coordinate roof assemblies with, flashing, trim, walls, and other adjoining work to provide a leak proof, secure, and noncorrosive installation.

1.8 WARRANTY

- A. All warranties shall commence on date of substantial completion. Upon completion and acceptance by architect and owner. The installing contractor shall provide the owner and architect with a thirty (30) year limited warrant from the manufacturer.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period. Materials failures include manufacturing defects and failure of asphalt shingles to self-seal after a reasonable time.
 - 1. Warranty Period: Two years from the date of Substantial Completion.

1.9 MEASUREMENT AND PAYMENT

- A. There will be no separate measurement or payment for work in this section. Payment will be included at the contract unit price as shown on the Schedule of Items under section 00001.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Basis of Design:
 - a. Tamko Heritage Laminated Asphalt Shingle or approved equal by COR.
 - b. Color and Product number – 30 Rustic Redwood 592
 - 2. NOTE: Listing of specific manufacturers is not an endorsement of compliance with the specifications. Proof of compliance must be received by the COR before job is started. Bidder will not be allowed to change materials after the bid opening date.
 - 3. Nails: Standard type roof nails should be used. Nail Shanks shall be a minimum of 12 gauge wire and a minimum head diameter of 3/8 inch. Nails should be long enough to penetrate 3/4 inches into the roof deck. Where the roof deck is less than 3/4 inches nails shall penetrate a minimum of 1/8 inch.
 - 4. Available Manufacturers:
 - a. Atlas Roofing Corporation
 - b. Celotex Corporation

- c. CertainTeed Corporation
- d. Elk Corporation of Dallas
- e. EMCO Limited, Building Products Division
- f. GAF Materials Corporation
- g. Georgia-Pacific Corporation
- h. Globe Building Materials, Inc
- i. IKO
- j. Malarkey Roofing Company
- k. Owens Corning
- l. PABCO Roofing Products
- m. TAMKO Roofing Products, Inc.

2.3 UNDERLAYMENT MATERIALS

- A. Felts: ASTM D 226 or ASTM D 4869, Type I asphalt-saturated organic felts, non-perforated.
- B. Self-Adhering Sheet Underlayment: Self Adhering SBR fiberglass reinforced base sheet
 - 1. Basis of Design Product: Grace Ice and Water Shield
 - 2. Available Products:
 - a. Carlisle Coatings & Waterproofing, Div. of Carlisle Companies Inc.; Dri-Start "A."
 - b. Grace, W. R. & Co.; Grace Ice and Water Shield.
 - c. Henry Company; Perma-Seal PE.
 - d. Johns Manville International, Inc.; Roof Defender.
 - e. NEI Advanced Composite Technology; AC Poly Ice and StormSeal.
 - f. Owens Corning; WeatherLock M.
 - g. Polyguard Products, Inc.; Polyguard Deck Guard.
 - h. Protecto Wrap Company; Rainproof TM.
 - i. SafSeal Innovations; SafSeal 7740.

2.4 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and with external deflector baffles; for use under ridge shingles.
 - 1. Available Products:
 - a. Air Vent Inc., a CertainTeed Company; ShingleVent II.
 - b. GAF Materials Corporation; Cobra Rigid Vent II.
 - c. Lomanco, Inc.; OR-4.
 - d. Mid-America Building Products; RidgeMaster Plus.
 - e. Obdyke, Benjamin Incorporated; Xtractor Vent X18.
 - f. Owens Corning; VentSure Ridge Vent.
 - g. Solar Group, Inc. (The), a Gibraltar Company; PRV4.

2. Minimum Net Free Area: 8 square feet
3. Width: 8 inches (min)
4. Thickness: 7/8 inch (max)

2.5 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized steel wire shingle nails, minimum **0.120-inch- (3-mm-)** diameter, smooth shank, sharp-pointed, with a minimum **3/8-inch- (9.5-mm-)** diameter flat head and of sufficient length to penetrate **3/4 inch (19 mm)** into solid wood decking or extend at least **1/8 inch (3 mm)** through OSB or plywood sheathing.
 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized steel wire with low profile capped heads or disc caps, **1-inch (25-mm)** minimum diameter.

2.6 METAL FLASHING AND TRIM

- A. Flashing and Trim: Formed from 24 gauge thick, aluminum-zinc alloy-coated steel sheet prepainted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges and fillers.
- B. Sheet Metal Flashing and Trim: Comply with requirements in Section 07620"Sheet Metal Flashing and Trim."
 1. Sheet Metal: Coil-coated aluminum or Zinc-coated (galvanized) steel.
- C. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.
 1. Drip Edges: Fabricate in lengths not exceeding **10 feet (3 m)** with **6-inch (150-mm)** roof deck flange and **1-1/2-inch (38-mm)** fascia flange with **1/2-inch (12.5-mm)** drip at lower edge unless full metal fascia is required.
 2. Flashings: Fabricate with concealed flange extending a minimum of **18 inches (450 mm)** beneath upslope asphalt shingles and **6 inches (150 mm)** beyond each side of chimney and **6 inches (150 mm)** above the roof plane.
- D. Vent Pipe Flashings: ASTM B 749, Type L51121, at least **1/16 inch (1.6 mm)** thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least **4 inches (100 mm)** from pipe onto roof.
- E. Open Valley Flashings: Install centrally in valleys, lapping ends at least **8 inches (200 mm)** in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS

- A. Contractor shall verify, on-site, that conditions presented are suitable for performance of the work. Report discrepancies in writing to the COR.
 - 1. The roof deck or substrate shall be inspected to assure that all surfaces are even, sound, and free of depressions, waves or unsuitable projections.
- B. Contractor shall verify all physical dimensions so that all materials are ordered to fit the Job.

3.2 EXAMINATION

- A. After tearing existing roof off, examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 UNDERLAYMENT INSTALLATION

- A. Double-Layer Felt Underlayment: Install double layers of felt underlayment on roof deck and over self-adhering underlayment perpendicular to roof slope in parallel courses. Install a **19-inch- (485-mm-)** wide starter course at eaves and completely cover with full-width second course. Install succeeding courses lapping previous courses **19 inches (485 mm)** in shingle fashion. Lap ends a minimum of **6 inches (150 mm)**. Stagger end laps between succeeding courses at least **72 inches (1830 mm)**. Fasten with roofing] nails.
 - 1. Terminate felt underlayment extended up not less than **4 inches (100 mm)** against sidewalls, curbs, chimneys and other roof projections.
- B. Self-Adhering Sheet Underlayment: As directed in Drawings, Install self-adhering sheet underlayment, wrinkle free, from ridgeline to 4 feet below the ridgeline, and from the Roof Edge to 4' up from exterior Wall Line Edge. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install as indicated in drawings. Lap sides not less than **3-1/2 inches (89 mm)**. Lap ends not less than **6 inches (150 mm)** staggered **36 inches (600 mm)** between courses. Roll laps with roller. Cover underlayment within seven days.

3.4 ASPHALT SHINGLE INSTALLATION

- A. General: Installation shall be conducted according to drawings and in accordance with the Guide to Installing Asphalt Roofing Shingles published by shingle manufacturer and local building code.

3.5 OPEN SHEET METAL VALLEYS

- A. Sheet metal flashing for valleys is specified in Section 07620 "Sheet Metal Flashing and Trim". Before installing and fastening flashing in place with metal cleats.
 - 1. Cut regular shingle courses on each roof on true line 2 inches (50 mm) from valley centerline at top of valley, and increase width between lines by for each one inch (25 mm) for each 8 feet (2440 mm) of valley length, continuing to eaves.
 - 2. Apply 2 inch (50 mm) band of asphalt roof cement over flashing, along and underside of shingles adjoining valley.
 - 3. Press shingles tightly into cement, and nail in normal manner, except apply nails not closer than 5 inches (125 mm) to valley centerline. Do not drive nails through valley flashing.
 - 4. Provide a 4 inch (100 mm) band of asphalt roof cement for fastening shingle tabs down along open metal gutters.

3.6 VENT AND STACK FLASHING

- A. Apply shingles up to point where vent or stack pipe projects through roof, and cut nearest shingle to fit around pipe. Before applying shingles beyond pipe, prepare flange of metal pipe vent flashing as specified in Section 076200 "Sheet Metal Flashing and Trim", by applying a 1/8 inch (3 mm) thick coating of asphalt roof cement on bottom side of flashing flange. Slip flashing collar and flange over pipe, and set coated flange in 1/16 (2 mm) inch coating of asphalt roof cement. After applying flashing flange, continue shingling up roof. Lap lower part of flange over shingles. Overlap flange with side and upper shingles. Fit shingles around pipe, and embed in 1/16 (2 mm) inch thick coating of asphalt roof cement where shingles overlay flange.

3.7 CHIMNEY FLASHING

- A. Provide treated wood crickets as specified in Section 061000 "Rough Carpentry". Provide metal base and counter-flashing as specified in Section 076200 "Sheet Metal Flashing and Trim". Uniformly coat masonry surfaces which are to receive flashing with asphalt primer applied at rate of 4 liters per 10 square meters one gallon per 100 square feet. Apply shingles over underlayment up to front face of chimney. Apply metal front base flashing with lower section extending at least 4 inches (100 mm) over shingles. Set base flashing in a 1/16 inch (2 mm) coating of asphalt roof cement on shingles and chimney face. Apply metal step flashing at sides in a coating of asphalt roof cement. Embed end shingles in each course that overlaps step flashing with asphalt roof cement. Apply metal rear base flashing over cricket and back of chimney in coating of asphalt roof cement. Apply end shingles in each course up to cricket, and

cement in place. Lap base flashing minimum of 3 inches (75 mm) with metal counter-flashing.

3.8 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and watertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete roof

3.9 SUBSTANTIAL COMPLETION INSPECTION

- A. At completion of roofing installation and associated work, meet with the Architect, Installer, COR, and roofing system manufacturer's representative, and other representatives directly concerned with the performance of the roofing system.
 - 1. Notify Architect or Owner 5 days in advance of date and time of inspection.
- B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party attending.
- C. Repair or replace (as required) deteriorated or defective work found at time above inspection to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION 073110

May 2014

USDA FOREST SERVICE, R-4
STOCKMORE BARRACKS AND WAREHOUSE ROOFING
SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following sheet metal flashing and trim:
 - 1. Formed steep-slope roof flashing and trim.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Water Infiltration: Provide sheet metal flashing and trim that does not allow water infiltration to building interior.

1.3 SUBMITTALS

- A. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.
 - 1. Include similar Samples of trim and accessories involving color selection.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

1.5 MEASUREMENT AND PAYMENT

- A. There will be no separate measurement or payment for work in this section. Payment will be included at the contract unit price as shown on the Schedule of Items and Section 00001.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, coating designation; structural quality.
2. Exposed Finishes: Apply the following coil coating:
 - a. Siliconized-Polyester Coating: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
 - 1) Color: As selected by Contracting Officer's Representative from manufacturer's full range.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, and other suitable fasteners designed to withstand design loads.
 1. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
- C. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.3 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop-fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.
- D. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

2.4 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Drip Edges and other Flashing: Fabricate from the following material:
 1. Siliconized Polyester, Coated Steel: 0.0217 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
 - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- C. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- D. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Seal joints with elastomeric sealant as required for watertight construction.

3.3 ROOF FLASHING AND TRIM INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
 - 1. Flashings: Fabricate with concealed flange extending a minimum of **18 inches (450 mm)** beneath upslope asphalt shingles and **6 inches (150 mm)** beyond each side of chimney and **6 inches (150 mm)** above the roof plane.
 - 2. Vent Pipe Flashings: ASTM B 749, Type L51121, at least **1/16 inch (1.6 mm)** thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least **4 inches (100 mm)** from pipe onto roof.

3.4 CLEANING AND PROTECTION

- A. Clean and neutralize flux materials. Clean off excess solder and sealants.
- B. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- C. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

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